

Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Input current [A]	Fuse [A]	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
						Material	Single sided	Double sided	Series operation	Parallel operation
LCC30A	Flyback converter	35 - 250	0.8	2.5	Thermistor	CEM-3	Yes		*1	No

*1 Refer to Instruction Manual.

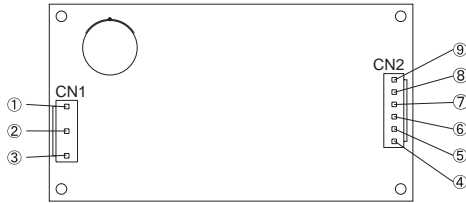
* The value of input current shown is at AC IN 100V and rated load.

* Switching frequency of flyback converter depends on input voltage and load factor.

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1 Terminal Block

●LCC30A



- ①Frame ground
- ②AC(N)
- ③AC(L)
- ④V1 Output
- ⑤G1(V1) GND
- ⑥V2 Output
- ⑦G2(V2) GND
- ⑧V3 Output
- ⑨G3(V3) GND

2 Function

2.1 Input voltage range

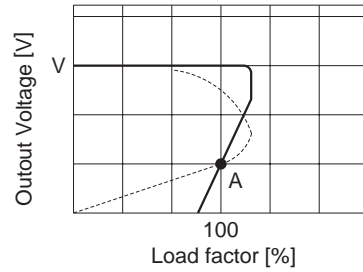
- The range is from AC85V to AC132V or DC110V to DC170V.
- AC input voltage must have a range from AC85V to AC132V or DC110V to DC170V for normal operation. If the wrong input is applied, the unit will not operate properly and/or may be damaged.
- In cases that conform with safety standard, input voltage range is AC100-AC120V(50/60Hz).

2.2 Inrush current limiting

- Inrush current limiting is built-in.
- If a switch on the input side is installed, it has to be the one handling the input inrush current.
- The thermistor is used for protection from inrush current. When power is turned ON/OFF repeatedly within a short period of time, it is necessary to have enough time for power supply to cool down.

2.3 Overcurrent protection

- Overcurrent protection is built-in and comes into effect at over 105% of the rated current. Overcurrent protection prevents the unit from short circuit and overcurrent condition of less than 10 seconds. The unit automatically recovers when the fault condition is cleared.
- When the overcurrent/short circuit condition continues more than 10 seconds, it may damage devices inside the power supply.
- The power supply which has a current foldback characteristics may not start up when connected to nonlinear load such as lamp, motor or constant current load. See the characteristics below.



—: Load characteristics of power supply.
 - - -: Characteristics of load (lamp, motor, constant current load, etc.).
 Note: In case of nonlinear load, the output is locked out at A point.

Fig.2.1 Current foldback characteristics

2.4 Overvoltage protection

●LCC30A

- In V1, the overvoltage protection circuit is built-in and comes into effect at 115 - 140% of the rated voltage. The AC input should be shut down if overvoltage protection is in operation. The minimum interval of AC recycling for recovery is 2 to 3 minutes (★).

★ The recovery time varies depending on input voltage.

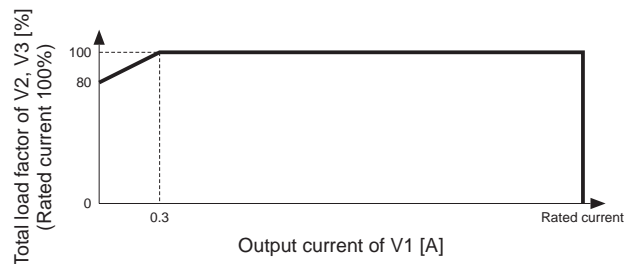
Remarks:

Please avoid applying the over-rated voltage to the output terminal. Power supply may operate incorrectly or fail. In case of operating a motor etc., please install an external diode on the output terminal to protect the unit.

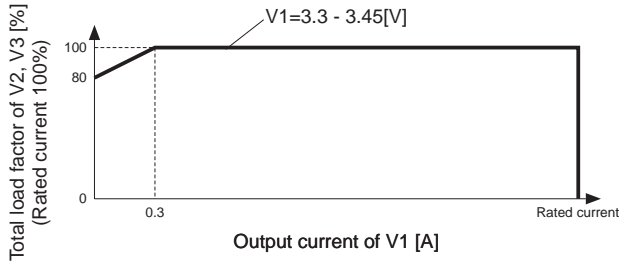
2.5 Minimum output current

- By V1 load condition, the load factor of V2 and V3 are changed as below.

●LCC30A-1, -2, 3



●LCC30A-4



Please consult us, if you use the unit with output voltage other than V1=3.3 - 3.45[V].

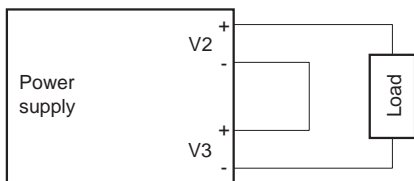
2.6 Output voltage adjustment range

- Adjustment of output voltage for V1 is possible by using potentiometer.
- Output voltage is increased by turning potentiometer clockwise and is decreased by turning potentiometer counterclockwise.
- Modified unit "-Y" is recommended which can adjust the output voltage.

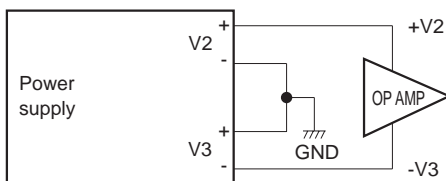
3 Series Operation and Parallel Operation

- Series operation with V2 and V3 is available by connecting the outputs of the unit as shown below. Output current in series connection should be lower than the lowest output current of the unit.
- Series operation is available by connecting the outputs of two or more power supplies, as shown below. Output currents in series connection should be lower than the lowest rated current in each unit.

(a)



(b)



- Series operation with other model is not possible.
- Parallel operation is not possible.

4 Assembling and Installation Method

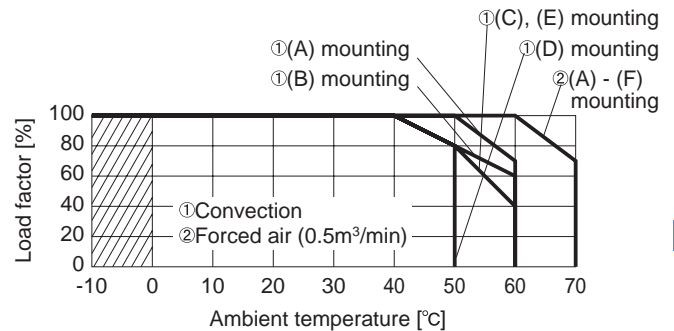
4.1 Installation method

- When two or more power supplies are used side by side, position them with proper intervals to allow enough air ventilation. Ambient temperature around each power supply should not exceed the temperature range shown in derating curve.
- Please be careful with that metal parts do not touch mounted parts at front side, where major components are mounted, when a power supply is installed with them.

4.2 Derating

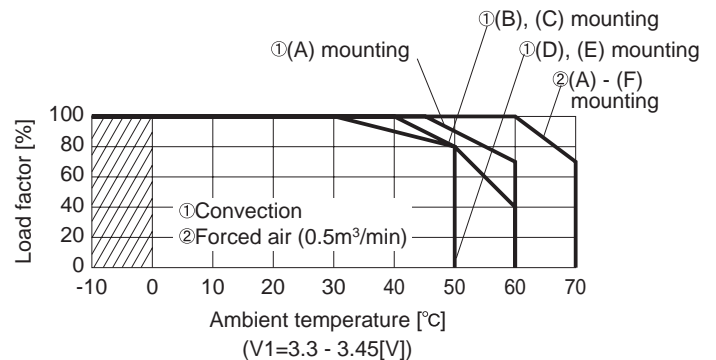
- The operative ambient temperature is different by with/without case cover or mounting position. Please refer drawings as below.

●LCC30A-1, -2, -3



LCC

●LCC30A-4

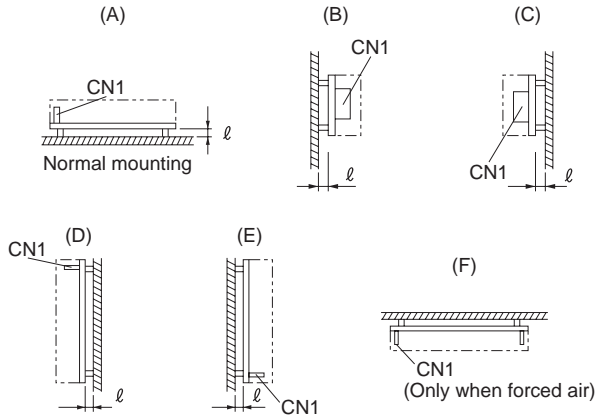


Please consult us, if you use the unit with output voltage other than V1=3.3 - 3.45[V].

Note:

In the hatched area, the specification of Ripple, Ripple Noise is different from other area.

- When unit mounted except below drawings, it is required to consider ventilated environment by forced air cooling or temperature/load derating. For details, please consult our sales or engineering departments.

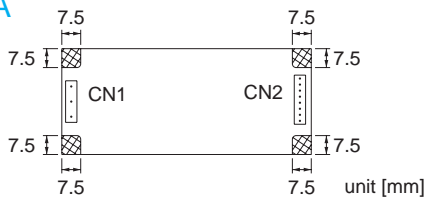


■ In case of metal chassis, keep more than 8mm for the part of ℓ to insulate between lead of component and metal chassis. If it is less than 8mm, insert the insulation sheet between power supply and metal chassis.

4.3 Mounting screw

- The mounting screw should be M3. The hatched area shows the allowance of metal parts for mounting.
- Keep isolation distance between metal parts for mounting and internal components.

● LCC30A



5 Peak Loading

■ Peak load current is possible to draw 10 seconds subject the average current should be less than the rated current. It will damage devices inside the power supply when the peak load current continues more than 10 seconds.

6 Ground

■ When installing the power supply with your unit, ensure that the input FG terminal or mounting hole FG is connected to safety ground of the unit. However, when applying the safety agency, connect the input FG terminal to safety ground of the unit.

7 Others

- This power supply is the rugged PCB type. Do not drop conductive objects in the power supply.
- At light load, there remains high voltage inside the power supply for a few minutes after power OFF. So at maintenance, take care about electric shock.
- This power supply is manufactured by SMD technology. The stress to PCB like twisting or bending causes the defect of the unit, so handle the unit with care.